

-SQA-SCOTTISH QUALIFICATIONS AUTHORITY

**Hanover House
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NATIONAL CERTIFICATE MODULE DESCRIPTOR

-Module Number- 0064429 -Session-1986-87

-Superclass- XR

-Title- ENGINE DIAGNOSTICS: COMPRESSION IGNITION SYSTEMS

-DESCRIPTION-

Type and Purpose A specialist module which enables the student to recognise and diagnose faults on compression ignition engine fuel systems.

Preferred Entry Level 04437 Engine Diagnostics: Mechanical
04433 Compression Ignition Engine Fuel Systems 1

Learning Outcomes The student should:

1. inspect and prepare engines for test;
2. select equipment, carry out formal test procedures and record results;
3. interpret test results and compare with standards;
4. select suitable repair methods for identified or given faults;
5. work in a safe manner.

Content/ Context Corresponding to the Learning Outcomes:

1. visual/audible inspection procedures and rectification of obvious defects prior to test.
2. specialised test equipment such as pressure gauges, spot check, tachometer, timing lamps, etc.

Limitations of common test equipment.

Procedures for recognising, diagnosing and testing faulty units such as:

- (a) lift pumps,
- (b) filter,
- (c) injector,
- (d) injection pumps,
- (e) governors,
- (f) turbo chargers,
- (g) air cleaners, etc.

Sources of test information.

3. methods of recording and interpreting test results.
4. appropriate repair procedures for common faults.

Methods of inspecting common faulty components to determine repair requirements.

5. safe working practices when working on running engines. Health precautions when working with diesel fuel and high pressures.

Suggested Learning and Teaching Approaches

This module should be taught in a workshop with adequate facilities for demonstration and practical work in a variety of units.

After demonstration, students should be assigned prepared tests and introduced gradually to the full test/adjustment procedures.

Emphasis should be placed on the student's ability to select and correctly use the specialist test equipment, carry out formal test procedures and suggest repair techniques.

Assessment Procedures

All learning outcomes must be validly assessed.

The student must be informed of the tasks which contribute to summative assessment. Any unsatisfactory aspects of performance should, if possible, be discussed with the student as and when they arise.

Acceptable performance in the module will be satisfactory achievement of the performance criteria specified for each learning outcomes.

The following abbreviations are used below:

- LO Learning Outcomes
 IA Instrument of Assessment
 PC Performance Criteria

LO1

IA Assignment report.

PC The student:

- (a) correctly identifies obvious visual/audible defects.
- (b) carries out appropriate test preparation work.

LO2

IA Observation checklist.

PC The student:

- (a) selects suitable test equipment;
- (b) uses the equipment correctly;
- (c) takes accurate test results.

LO3

IA Assignment report.

PC The student correctly interprets test results.

LO4

IA Assignment report.

PC The student selects suitable repair procedures for stated faults.

LO5

IA Observation checklist.

PC The student consistently:

- (a) wears all necessary safety clothing and equipment;
- (b) behaves in a manner appropriate to the working environment;
- (c) uses tools and equipment safely.